

Claims

1. A pressure-sensitive adhesive based on at least 50% of one or more block copolymers, at least one block copolymer being composed at least in part on the basis of (meth)acrylic acid derivatives, the at least one block copolymer comprising at least the unit P(A)-P(B)-P(A), comprising at least one polymer block P(B) and at least two polymer blocks P(A), where

- P(A) independently of one another represent homopolymer or copolymer blocks made up of monomers of group A, the (co)polymer blocks P(A) each having a softening temperature in the range from 0°C to +175°C,
- P(B) represents a homopolymer or copolymer block comprising monomers of group B, the (co)polymer block P(B) having a softening temperature in the range from -130°C to +10°C, and
- the (co)polymer blocks P(A) and P(B) are not homogeneously miscible with one another at 25°C,

characterized in that

- the adhesive has a refractive index $n_{d,a}$ of $n_{d,a} \geq 1.52$ at 25°C,
- at least one of the (co)polymer blocks P(A) have a refractive index $n_{d,A}$ of $n_{d,A} \geq 1.58$ at 25°C, and
- the (co)polymer block P(B) has a refractive index $n_{d,B}$ of $n_{d,B} \geq 1.43$ at 25°C.

2. The pressure-sensitive adhesive of at least one of the preceding claims, characterized in that

all the (co)polymer blocks P(A) each have a refractive index $n_{d,A}$ of $n_{d,A} \geq 1.58$ at 25°C.

3. The pressure-sensitive adhesive of at least one of the preceding claims, characterized in that

one or all of the block copolymers may be described by one or more of the following general formulae:

P(A)-P(B)-P(A) (I)

P(B)-P(A)-P(B)-P(A)-P(B) (II)

[P(A)-P(B)]_nX (III)

[P(A)-P(B)]_nX[P(A)]_m (IV)

where

- $n = 3$ to 12 , $m = 3$ to 12
 - X represents a polyfunctional branching region,
 - $P(A)$ independently of one another represent homopolymer or copolymer blocks of monomers of group A , the (co)polymer blocks $P(A)$ each having a softening temperature in the range from 0°C to $+175^{\circ}\text{C}$ and each having a refractive index $n_{d,A'}$ of $n_{d,A'} \geq 1.58$ at 25°C ,
 - $P(B)$ independently of one another represents homopolymer or copolymer blocks comprising monomers of group B , the (co)polymer blocks $P(B)$ each having a softening temperature in the range from -130°C to $+10^{\circ}\text{C}$ and each having a refractive index $n_{d,A'}$ of $n_{d,A'} \geq 1.43$ at 25°C .
4. The pressure-sensitive adhesive of at least one of the preceding claims, characterized in that the ratio of the chain lengths of the polymer blocks $P(A)$ to those of the polymer blocks $P(B)$ is chosen such that the polymer blocks $P(A)$ are present as a disperse phase ("domains") in a continuous matrix of the polymer blocks $P(B)$, in particular as spherical or distortedly spherical or cylindrical domains.
5. The pressure-sensitive adhesive of at least one of the preceding claims, comprising a blend of
- at least one diblock copolymer with at least one triblock copolymer, or
 - at least one diblock copolymer with at least one star-shaped block copolymer, or
 - at least one triblock copolymer with at least one star-shaped block copolymer.
6. Pressure-sensitive adhesive systems of at least one of the preceding claims, characterized in that the pressure-sensitive adhesive is admixed with one or more homopolymers and/or copolymers of the form $P'(A)$ and/or $P'(B)$, where
- the (co)polymers $P'(A)$ each have a softening temperature in the range from 0°C to $+175^{\circ}\text{C}$ and each have a refractive index $n_{d,A'}$ of $n_{d,A'} \geq 1.58$ at 25°C ,
 - the (co)polymers $P'(B)$ each have a softening temperature in the range from -130°C to $+10^{\circ}\text{C}$ and each have a refractive index $n_{d,A'}$ of $n_{d,A'} \geq 1.43$ at 25°C .

7. The pressure-sensitive adhesive of at least one of the preceding claims, characterized by an outgassing figure of not more than 250 $\mu\text{g/g}$, measured by heating a sample area, measuring 40 cm^2 , of a PET film coated (coat weight 50 g/m^2) with the pressure-sensitive adhesive under atmospheric pressure at 100°C for one hour and determining the volatile constituents via GC-MS.
8. The pressure-sensitive adhesive of at least one of the preceding claims, characterized by a fogging value of not less than 98%, measured by heating a sample, measuring 50 cm^2 , of a coated (coat weight 50 g/cm^2) PE film with the pressure-sensitive adhesive, under atmospheric pressure at 100°C for three hours and detecting the precipitation, which deposits on a pane of glass, as the 60° reflectometer value, the fogging value being reported as the ratio of this value to the 60° reflectometer value, of the precipitation-free pane of glass, and expressed as a percentage.
9. Pressure-sensitive adhesive systems of at least one of the preceding claims, characterized in that the pressure-sensitive adhesive is in the form of at least one layer.
10. Pressure-sensitive adhesive systems of at least one of the preceding claims, characterized by at least one backing or carrier layer, in particular in the form of a film layer.